

### Remarks

Claims 1-9, 13-19, and 28-46, and 56-64 are pending in the application. Claims 1, 40, 47, and 56 have been amended. Claims 62-64 have been added. Claims 10-12, 20-27, and 47-55 were withdrawn from consideration based on an election of species requirement. Withdrawn claims 10-12, 20-27, and 47-55 have also been amended in case the generic claims are allowable so that they are in a form for allowance and issue. No new matter has been added by virtue of this amendment. Reconsideration of the application in view of this amendment is requested.

### Claim Rejections-- 35 U.S.C. § 112, second paragraph

The Examiner rejects claim 17 under 35 U.S.C. § 112, second paragraph, as being indefinite and indeterminate. Claim 1 has been amended to avoid the indefinite problem identified by the Examiner by replacing non-mechanical with non-motor operated. A micromechanical electronically tuned reactance has movement provided by electrostatic force rather than by a motor. Thus, the indefinite problem has been corrected.

### Claim Rejections-- 35 U.S.C. § 102(b)

The Examiner rejects claims 1-5, 13, 15, 16, 28, 37, 40, and 56-60 under 35 U.S.C. § 102(b), as being anticipated by Dent. Claims 1, 40, 47, and 56 have been amended to more clearly describe the invention and distinguish from Dent. For example, claim 1, as amended, states:

1. An electronically tuned circuit, comprising a power amplifier coupled to an electronically tunable output network, said power amplifier capable of being operated in a large-signal mode, said output network including an electronically tunable reactive component, wherein electronic tuning of said electronically tunable reactive component includes non-motor operated electronic tuning when said power amplifier is operated in said large-signal mode, further wherein a control line extends to said electronically tunable reactive component for electronically varying reactance of said reactive component over more than two values.

Applicant would ask the Examiner to consider that Dent provides for varying over two states and no more than two states, as shown in FIGS. 2 and 3. In these figures Dent provides the embodiment with a fixed reactance and a switch. The switch can provide no more than two states for reactance 42 or 74, either in the circuit or not in the circuit.

The alternative embodiment in Dent of using a variable reactance (not illustrated in Dent) is described as providing the same two states. Dent states:

However, in this preferred embodiment according to the present invention, at least one switched or otherwise variable reactance element 74 is introduced into the matching network by a switch 76 or other reactance variance device controlled by a control line 50. The control line 50 may be connected to a manual switch or to a suitable control device for automatic control. The reactance element 74 may have a fixed or variable reactance. One example of a variable reactance is a varactor diode. Otherwise, a fixed reactance 74 may be switched into the network by a manual switch or electronic switch such as a PIN diode.

Thus, there is either switch 76 or another switch or control device for automatic control operating on control line 50. Either way there are only the two switch positions required by Dent to meet his AM and FM requirements. There is no teaching or suggestion--and there is no motivation in Dent--to provide for electronically varying reactance of the reactive component over more than two values defined by a switch. Further, Dent teaches against providing more than two states by providing switch 76 that has only two states, on and off, providing capacitor 74 completely in the circuit or floating completely out of the circuit.

Claims 40, 47, and 56, as amended have a similar limit as claim 1.

Furthermore, there is no teaching or suggestion in Dent that the output network is adapted to be tuned to a selected frequency, a fixed frequency, or a variable frequency, as described in claims 2 and 57.

Nor there is there teaching or suggestion in Dent to provide the output network adapted to be adjusted to maintain a match with a varying load impedance, as described in claims 3 and 58, as amended herein. Instead Dent has a fixed load impedance, his antenna, and he switches the impedance of the filter located between the power amplifier and the antenna to change the impedance seen by the power amplifier, as described in several places, including column 4, lines 14-15 and lines 53-55.

Nor there is there teaching or suggestion in Dent to provide the output network adapted to modulate the signal, as provided in claim 4. Dent just amplifies a signal that is already modulated, as described in Dent in col 4, lines 15-18, "a modulated, RF carrier is received by a power amplifier 21 for amplification to a power level suitable for radio frequency transmission."

Nor there is there teaching or suggestion in Dent to provide a controller for providing a signal to control the electronically tunable output network as described in claims 28 and 60.

Nor there is there teaching or suggestion in Dent to provide a bias input for setting bias level of the power amplifier in which the bias level is adapted to the minimum level necessary to enable operation of the power amplifier, as described in claim 38.

Nor there is there teaching or suggestion in Dent to provide the output network including at least two reactive components connected as a tuned circuit, wherein at least one of the reactive components is adapted to being electronically tuned by a tuning signal, as described in claim 60.

Therefore the rejection of claims 1, 40, 47, and 56, and claims dependent thereon, under 35 U.S.C. § 102(b), as being anticipated by Dent has been traversed.

#### **Claim Rejections— 35 U.S.C. § 103(a)**

The Examiner rejects claims 6-9, 14, 17-19, 31, 32, 38, 41-46, and 61 under 35 U.S.C. § 103(a), as being unpatentable over Dent. Applicant would respectfully ask the Examiner to consider that independent claims 1, 40, 47, and 56, as amended, include the limit, "wherein a control line extends to said electronically tunable reactive component **for electronically varying reactance of said reactive component over more than two values.**" As discussed above under the 102 rejections Dent teaches against this limit by providing a switch that allows only two states. His description of the variable reactor does not teach or suggest adding additional states. For providing his AM and FM operating modes no further state is needed than the two states Dent provides. Further, a scheme with more than two states is not obvious from Dent since adding such a requirement to Dent would not be enabled by Dent's on-off switching scheme. Further invention would be needed to provide additional states. Thus, the rejection of claims 1, 40, 47, and 56 and claims dependent thereon under 35 U.S.C. § 103(a), as being unpatentable over Dent has been traversed.

The Examiner rejects claims 30, 33, and 34 under 35 U.S.C. § 103(a), as being unpatentable over Dent in view of Hotta. Nether Dent nor Hotta nor the combination teaches or suggests the limit, "wherein a control line extends to said electronically tunable reactive component **for electronically varying reactance of said reactive component over m re than two values.**" Thus, the rejection of independent claim 1 and claims

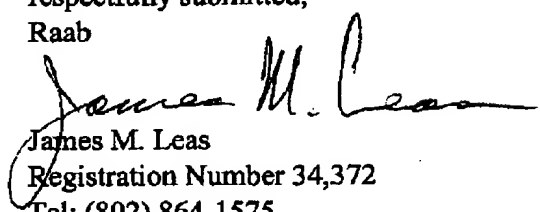
dependent thereon, including claims 30, 33, and 34 has been traversed.

Claim 47 has been amended to be dependent on claim 1. Therefore, applicant requests that the species be rejoined if claim 1 is allowable.

The prior art made of record and not relied up has been reviewed and is not believed to provide the limit missing from the cited references.

It is believed that the claims are in condition for allowance. Therefore, applicant respectfully requests favorable reconsideration. If there are any questions please call applicant's attorney at 802 864-1575.

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